

HP TFT5600 Rackmount Keyboard and Monitor (RKM) User Guide



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About This Guide

This guide is designed to be used as step-by-step instructions for installation and as a reference for operation, troubleshooting, and future upgrades.

Important Safety Information

Before installing this product, read the *Important Safety Information* document included with the server.

Symbols on Equipment

The following symbols may be placed on equipment to indicate the presence of potentially hazardous conditions:



WARNING: This symbol, in conjunction with any of the following symbols, indicates the presence of a potential hazard. The potential for injury exists if warnings are not observed. Consult your documentation for specific details.



This symbol indicates the presence of hazardous energy circuits or electric shock hazards. Refer all servicing to qualified personnel.

WARNING: To reduce the risk of injury from electric shock hazards, do not open this enclosure. Refer all maintenance, upgrades, and servicing to qualified personnel.



This symbol indicates the presence of electric shock hazards. The area contains no user or field serviceable parts. Do not open for any reason.

WARNING: To reduce the risk of injury from electric shock hazards, do not open this enclosure.



This symbol on an RJ-45 receptacle indicates a network interface connection.

WARNING: To reduce the risk of electric shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into this receptacle.



This symbol indicates the presence of a hot surface or hot component. If this surface is contacted, the potential for injury exists.

WARNING: To reduce the risk of injury from a hot component, allow the surface to cool before touching.



These symbols, on power supplies or systems, indicate that the equipment is supplied by multiple sources of power.

WARNING: To reduce the risk of injury from electric shock, remove all power cords to completely disconnect power from the system.



This symbol indicates that the component exceeds the recommended weight for one individual to handle safely.

Weight in kg
Weight in lb

WARNING: To reduce the risk of personal injury or damage to the equipment, observe local occupational health and safety requirements and guidelines for manual material handling.

Rack Stability



WARNING: To reduce the risk of personal injury or damage to the equipment, be sure that:

- The leveling jacks are extended to the floor.
 - The full weight of the rack rests on the leveling jacks.
 - The stabilizing feet are attached to the rack if it is a single-rack installation.
 - The racks are coupled together in multiple-rack installations.
 - Only one component is extended at a time. A rack may become unstable if more than one component is extended for any reason.
-

Symbols in Text

These symbols may be found in the text of this guide. They have the following meanings.



WARNING: Text set off in this manner indicates that failure to follow directions in the warning could result in bodily harm or loss of life.



CAUTION: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.

IMPORTANT: Text set off in this manner presents essential information to explain a concept or complete a task.

NOTE: Text set off in this manner presents additional information to emphasize or supplement important points of the main text.

Getting Help

If you have a problem and have exhausted the information in this guide, you can get further information and other help in the following locations.

Technical Support

In North America, call the HP Technical Support Phone Center at 1-800-652-6672. This service is available 24 hours a day, 7 days a week. For continuous quality improvement, calls may be recorded or monitored. Outside North America, call the nearest HP Technical Support Phone Center. Telephone numbers for worldwide Technical Support Centers are listed on the HP website, www.hp.com.

Be sure to have the following information available before you call HP:

- Technical support registration number (if applicable)
- Product serial number
- Product model name and number
- Applicable error messages
- Add-on boards or hardware
- Third-party hardware or software
- Operating system type and revision level

HP Website

The HP website has information on this product as well as the latest drivers and flash ROM images. You can access the HP website at www.hp.com.

Authorized Reseller

For the name of your nearest authorized reseller:

- In the United States, call 1-800-345-1518.
- In Canada, call 1-800-263-5868.
- Elsewhere, see the HP website for locations and telephone numbers.

Introduction

The HP TFT5600 Rackmount Keyboard and Monitor (RKM) is a rack-mountable 1U integrated flat panel monitor and keyboard with hot keys and track ball.

NOTE: 1U= 1.75 inches or 4.445 cm

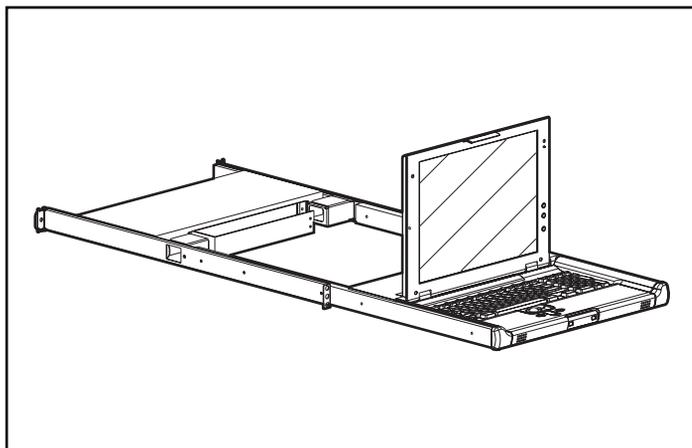


Figure 1-1: TFT5600 RKM

The TFT5600 RKM is mounted on rails with space available to add a 1U switch box behind the unit. The TFT5600 RKM can be used with all Compaq 9000 Series racks and HP 10000 Series racks..

The TFT5600 RKM uses a 15-inch (38.1-cm) color active matrix Thin Film Transistor (TFT) Liquid Crystal Display (LCD).

The TFT5600 RKM keyboard provides integrated hot keys for use with HP switch box products. This function facilitates easy switching between rack-mounted devices. The keyboard has nine programmable hot keys to provide switching functionality between nine devices with an additional wizard key for programming.

TFT5600 RKM Features

The following table identifies the TFT5600 RKM features:

Table 1-1: TFT5600 RKM Features

Feature	Description
Display	15-inch (38.1-cm) viewable area display
Resolution	1024 x 768 resolution at 60 Hz, plus full-screen support for lower resolutions

continued

Table 1-1: TFT5600 RKM Features *continued*

Feature	Description
VGA connector	Plugs into a standard VGA connector; does not require a special graphics adapter card
Plug and play	Plug and Play capability if supported by your system
On-screen display (OSD)	Available in ten languages: <ul style="list-style-type: none">• English• Dutch• French• German• Italian• Japanese• Portuguese• Simple Chinese• Swedish• Spanish
Keyboard with hot keys and track ball	Nine hot keys to provide switching between nine rack-mounted devices with an additional key for programming
Power supply	12v DC/ 40 Watt
Display switch	Turns power off to the panel when display assembly is closed and latched
Scroll keys	Four scroll keys under track ball

Components

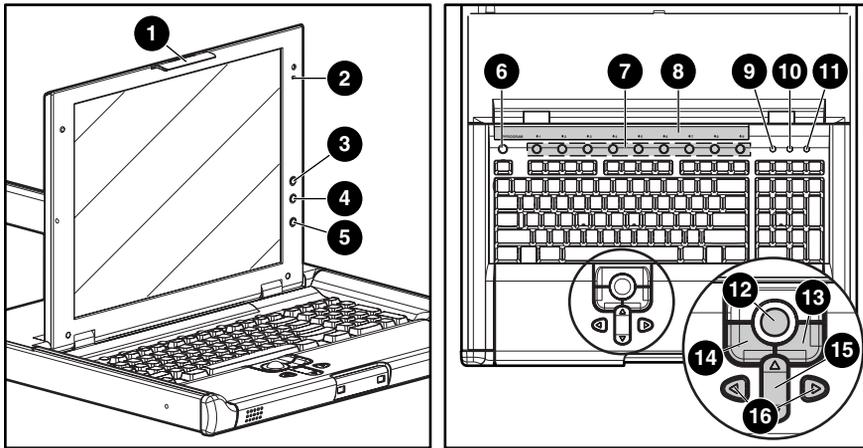


Figure 1-2: TFT5600 RKM Components

Reference Number	Component	Function
1	Display release latch	Pivots up, used to unlatch the display assembly
2	Display switch	Powers off the panel when the display is closed while the computer is still on
3	On-screen display (OSD) scroll up button	Used to scroll up in the OSD menu and adjust the function
4	OSD scroll down button	Used to scroll down in the OSD menu and adjust the function
5	OSD activation button	<ul style="list-style-type: none"> • Launches OSD menus • Selects • Exits menus and OSD

continued

Table 1-1: TFT5600 RKM Features *continued*

Reference Number	Component	Function
6	Programmable wizard key	Initiates the programming operations mode, allows programming of nine hot keys, and returns the hot keys to defaults
7	Nine hot keys	Allows quick access to the nine most often used devices
8	Keyboard hot key label (user installed)	Allows user to record programmed hot keys
9	Number lock LED	
10	Cap lock LED	
11	Scroll lock LED	
12	Track ball	
13	Right pick button	
14	Left pick button	
15	Scroll up and down button	
16	Scroll left and right	

Installing the TFT5600 RKM

This chapter discusses the installation and setup procedures for installing the TFT5600 RKM.

Kit Contents

Below are the items and quantities required for assembly:

- M-6 cage nuts (2)
- M-6 screws (8)
- 6-32 screws (12)
- Mounting rails with slides (2)
- Cable management arm (1)
- Brace (1)
- TFT 5600 RKM (1)
- Lock plate (2)
- Keyboard hot key label (2)
- Rack template (1)

This kit may contain extra pieces of hardware for your convenience.

Installation Instructions

1. Determine the appropriate rack position for the TFT5600 RKM, generally 20U or user preference.

Measuring from the top of the component, use the template on the front and rear of the rack frame to mark the attachment points for the mounting brackets and rear cage nuts.

NOTE: When using the template on the back of the rack, mark the rack at the top of the template to help align the next component.

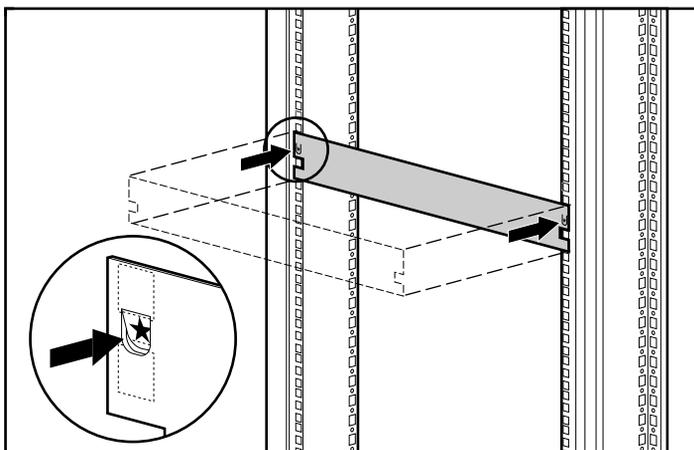


Figure 2-1: Measuring with the 1U template

2. Install the mounting rails with slides.
 - a. Insert one cage nut (1) into the hole marked with the rack template on the rear of the rack.
 - b. Hook the tabs on the mounting rail into the appropriate holes on the rear of the rack, and insert one screw (2).

IMPORTANT: Be sure to align the front screw holes when attaching the mounting rail to the rear of the rack.

- c. Insert two M-6 screws into the holes at the front of the rack, and then tighten (3).
 - d. Repeat steps 2a through 2c to install the other mounting rail.

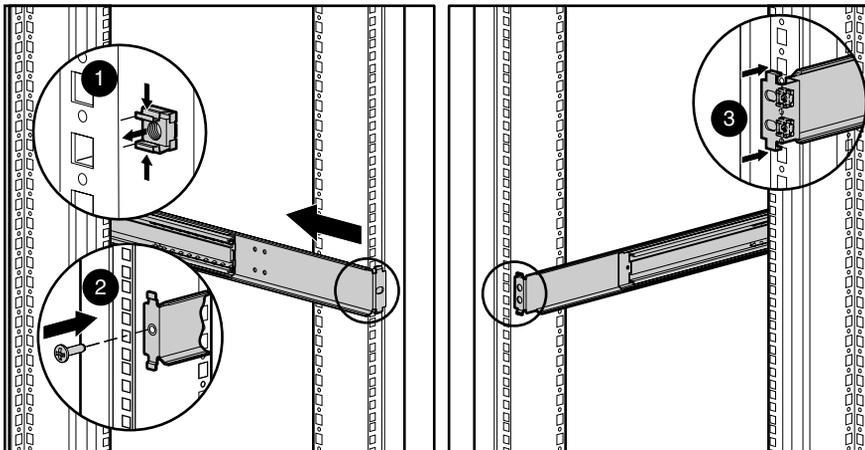


Figure 2-2: Installing mounting rails to the rear and front of the rack

3. Attach the brace assembly to each mounting rail with the cable access hole facing the right side of the rack.
 - a. Flex the rail out slightly to allow the brace to be inserted. Align the screw holes on the brace with the screw holes on the rails (1).
 - b. Insert one 6-32 screw (2) on each side.
 - c. Tighten the screws (3).

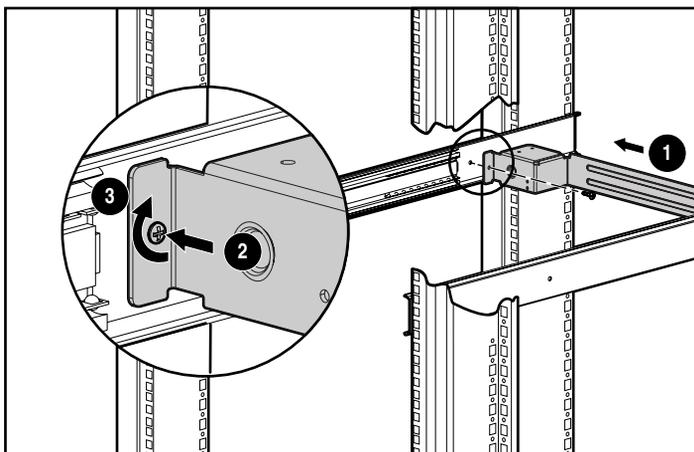


Figure 2-3: Attaching the brace to the mounting bracket

NOTE: Make sure the cable access hole is positioned on the right, to allow appropriate routing of cables.

4. Install the tray assembly.
 - a. Fully extend the sliding rails until locked (1).
 - b. Place the tray assembly on the rails, aligning the screw holes on the tray with the tabs on the rails (2).
 - c. Secure with two 6-32 screws on each side (3).

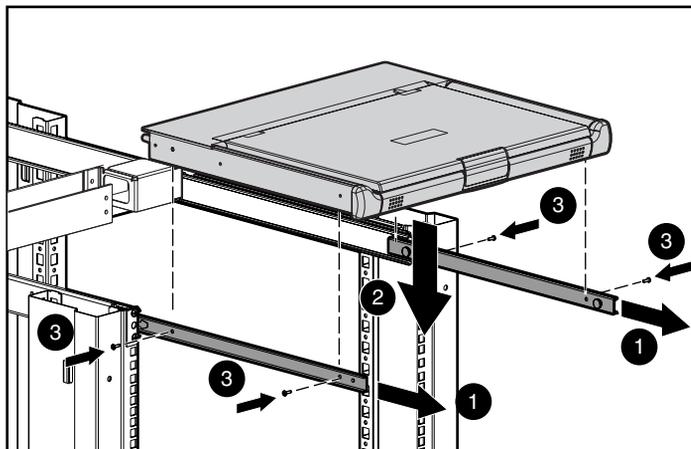


Figure 2-4: Installing the tray assembly

5. Attach the cable management arm to the rear of the tray with two 6-32 screws.

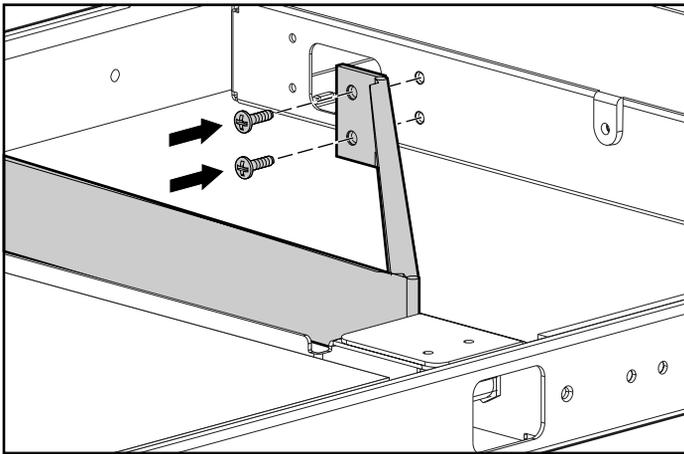


Figure 2-5: Attaching the cable management arm

6. Carefully route the keyboard power and video cables into the cable management arm. Then route the cables through the mounting rail opening.

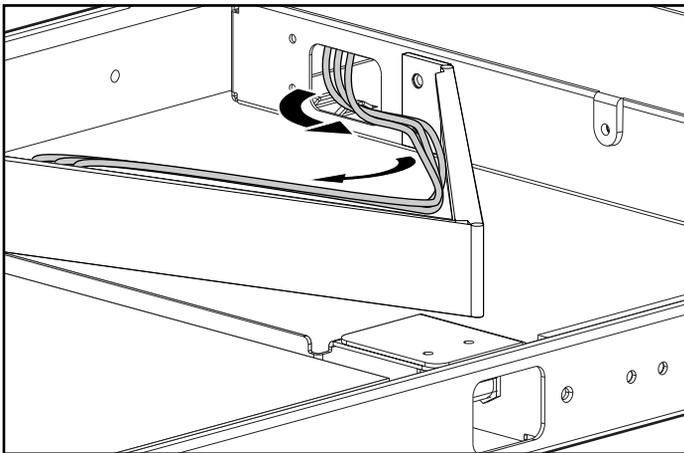


Figure 2-6: Routing the cables

7. Place the tray back into the rack.
 - a. Slide the locking bar (1) to unlock.

IMPORTANT: If the TFT5600 RKM is not properly aligned with other rack-mounted devices when installed, cosmetic damage to the top of the unit can occur due to interference. Leave protective sheet on the unit while adjusting.

- b. Carefully push the tray (2) into the rack.

IMPORTANT: If the TFT5600 RKM interferes with the other rack-mounted devices, above or below, loosen the M-6 screws on the mounting rails to make appropriate adjustments (See Figure 2-2).

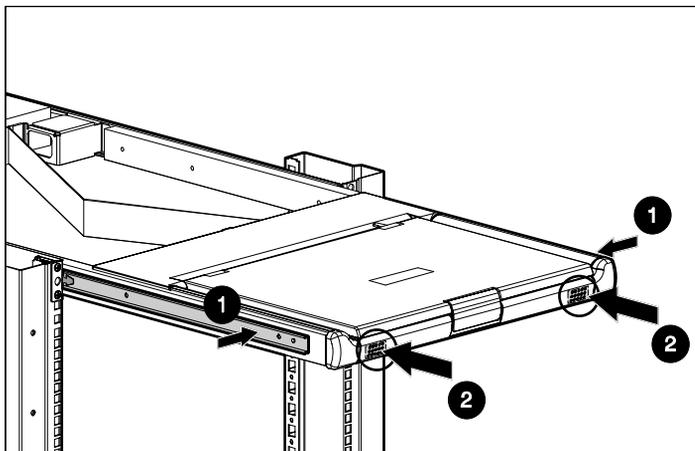


Figure 2-7: Placing tray back into the rack

Accessing the TFT5600 RKM Tray

1. Gently push in on the tray (1) to release lock, and then fully extend the unit until the slides lock.
2. Lift up the display release latch (2) then rotate the display (3).

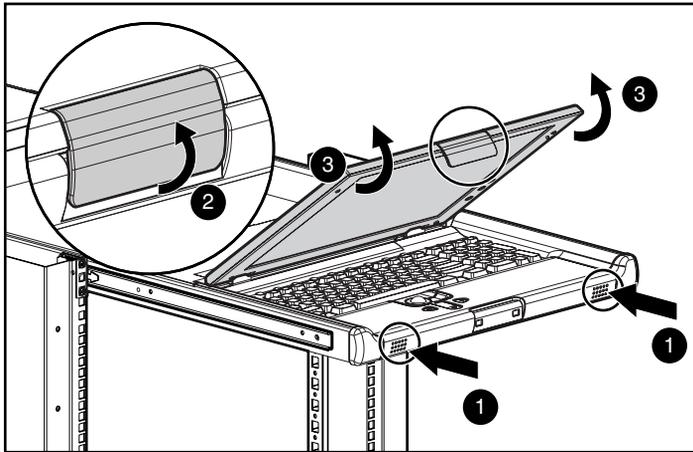


Figure 2-8: Accessing the TFT5600 RKM

Removing the TFT5600 RKM

To remove the TFT5600 RKM, reverse the order of the steps listed in the “Installation Instructions” section.

Cable-Locking Mechanism

Cables on the TFT5600 RKM have a locking mechanism to provide a secure cable connection. You must use proper procedures when disconnecting these cables.



CAUTION: Failure to follow proper disconnect procedures could result in damage to the cable or your unit.

To properly disconnect the keyboard cable:

1. Grasp the housing.
2. Slide it back to release the locking mechanism.
3. Remove the cable.

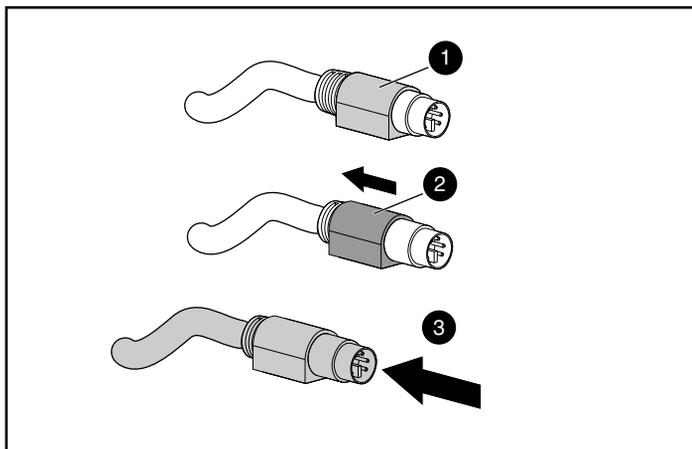


Figure 2-9: Disconnecting the keyboard cable

To insert the cable, simply plug it into the appropriate connector. The locking mechanism automatically locks the cable in place.

If you are connecting the keyboard to a switchbox, connect the cables to the switch in this order:

1. Mouse
2. Video
3. Keyboard

IMPORTANT: This cable connection sequence is particularly important later when you install new devices to your system. You can connect a mouse and/or keyboard to the switch when the system is running. When you connect the new device, the switch recognizes the device and configures it to the settings of the currently selected computer. This allows you to replace failed devices without having to restart the system.

Operating the TFT5600 RKM

On-Screen Display

The On-Screen Display (OSD) buttons are used to operate the TFT5600 RKM OSD menus.

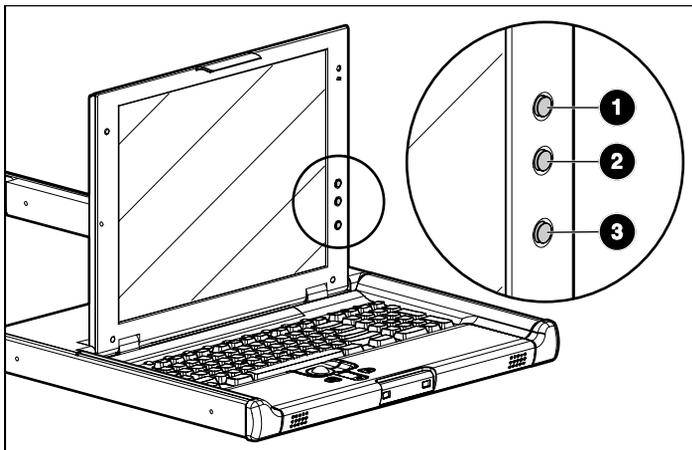


Figure 3-1: OSD Buttons

Reference Number	Component	Function
1	OSD scroll up button	Used to scroll up in the OSD menu and adjust the function
2	OSD scroll down button	Used to scroll down in the OSD menu and adjust the function
3	OSD activation button	<ul style="list-style-type: none">• Launches OSD menus• Selects• Exits menus and OSD

OSD Main Menu

To launch the OSD main menu:

1. Press the OSD activation button (3) on the front panel. The main menu displays on the screen
2. To select a menu item, scroll down by pressing the Down (-) button (2), or scroll up by pressing the Up (+) button (1).
3. Press the OSD activation button (3) again to select your choice. A second level will expand menu items.

Mode Setting—Indicates this setting is on a mode-by-mode basis. Settings obtained from this call are stored in Electrical Erasable Programmable Read Only Memory (EEPROM) and restored upon mode set. They can be changed by running this function again or by resetting Factory Presets only while in the mode you want to restore.

Global Setting—Indicates this setting is a global setting applied to all modes. Settings obtained from this call are stored in EEPROM and restored upon power on. They can be changed by running this function again or by resetting Factory Presets.

NOTE: Mode Settings and Global Settings will be used throughout the following sections.

OSD Default Menu

The OSD default menu provides access to the following functions:

- Auto Setup
- Brightness
- Contrast
- Image Adjust
- Languages
- OSD Settings
- Settings Restored on a Global Basis
- Settings Restores on a Mode Basis
- Information
- Exit

Auto Setup

This option performs four functions automatically:

Auto Level

Automatically adjusts the black and white levels of the screen. Auto Level is a Global Setting.

Auto Position

Automatically adjusts the position of the screen. Auto Position is a Mode Setting.

Auto Phase

Automatically adjusts the phase. Auto Phase is a Global Setting.

Auto Clock

Automatically adjusts the output clock per line to match input. Auto Clock is a Global Setting.

Brightness

This option displays a slider bar within the Status Bar to allow the adjustment of the back light brightness.

- **Up (+)** increases the current value.
- **Down (-)** decreases the current value.
- **Select** accepts the current value and exits the slider bar.

Brightness is a Mode Setting.

Contrast

This option displays a slider bar within the Status Bar to allow the adjustment of the screen contrast. Contrast adjustments are more discernible when the background is white. Contrast will launch Auto Level if color values are out of range.

- **Up (+)** increases the current value.
- **Down (-)** decreases the current value.
- **Select** accepts the current value and exits the slider bar.

Contrast is a Mode setting.

Image Adjust

This option contains a sub-menu:

- Horizontal Position
 - Vertical Position
 - Image Enhancement
 - Color
 - Exit
- **Up (+)** moves up a selection in the Image Adjust menu list.
 - **Down (-)** moves down a selection in the Image Adjust menu list.
 - **Select** activates one of the Image Adjust actions.

Horizontal Position

This option displays a slider bar within the Status Bar to allow the adjustment of the screen's horizontal position.

The center of the bar is obtained from the factory-preset value for Horizontal Position. At value=MIN, the selection of + positioning response may vary between XGA and SXGA panels. This is caused by physical limitations at MIN OSD placement.

- **Up (+)** increases the current value.
- **Down (-)** decreases the current value.
- **Select** accepts the current value and exits the slider bar.

Horizontal Position is a Mode Setting.

Vertical Position

This option displays a slider bar within the Status Bar to allow the adjustment of the screen's vertical position.

The Center of the bar is obtained from the factory-preset value for Vertical Position.

- **Up (+)** increases the current value.
- **Down (-)** decreases the current value.
- **Select** accepts the current value and exits the slider bar.

Vertical Position is a Mode Setting.

Image Enhancement

This option contains three choices:

- Context Sensitive
- Text (sharp)
- Video (smooth)
 - **Up (+)** moves up a selection in the Image Enhancement menu list and activates that choice.
 - **Down (-)** moves down a selection in the Image Enhancement menu list and activates that choice.
 - **Select** exits the Image Enhancement menu list leaving the last selection as the new default.

Context Sensitive

When selected, the IQ Scaling Engine is automatically adjusted on a per-pixel basis, allowing text to be sharpened and graphics images smoothed.

Text

When selected, the IQ Scaling Engine will be set to use a high sharpening filter to allow for sharper text.

Video

When selected, the IQ Scaling Engine will be set to use a low sharpening filter to allow sharper graphics.

Color

This option contains a sub-menu:

- Color Temp
 - RGB Adjust
 - Black Level Adjust
 - Advanced
 - Exit
- **Up (+)** moves up a selection in the Color menu list.
 - **Down (-)** moves down a selection in the Color menu list.
 - **Select** activates one of the Color actions.

Color Temp

This option contains a sub-menu:

NOTE: Color Temp-Cool, -Neutral, and -Warm are Mode Settings.

- Cool
When selected, a Gamma table for Cool temperatures will be loaded for all three-color channels.
- Neutral
When selected, a Gamma table for Neutral temperatures will be loaded for all three-color channels.
- Warm
When selected, a Gamma table for Warm temperatures will be loaded for all three-color channels.
- Exit
 - **Up (+)** moves up a selection in the Color Temp menu list and activates that choice.
 - **Down (-)** moves down a selection in the Color Temp menu list and activates that choice.
 - **Select** exits the Color Temp menu list leaving the last selection as the new default.

RGB Adjust

This option contains a sub-menu:

NOTE: RGB Adjust-Red, -Green, and -Blue are Mode Settings

- Red

This option displays a slider bar within the Status Bar to allow the adjustment of the screen's Red color.

- **Up (+)** increases the current value.
- **Down (-)** decreases the current value.
- **Select** accepts the current value and exits the slider bar.

- Green

This option displays a slider bar within the Status Bar to allow the adjustment of the screen's Green color.

- **Up (+)** increases the current value.
- **Down (-)** decreases the current value.
- **Select** accepts the current value and exits the slider bar.

- Blue

This option displays a slider bar within the Status Bar to allow the adjustment of the screen's Blue color.

- **Up (+)** increases the current value.
- **Down (-)** decreases the current value.
- **Select** accepts the current value and exits the slider bar.

- Exit

- **Up (+)** moves up a selection in the RGB Adjust menu list.
- **Down (-)** moves down a selection in the RGB Adjust menu list.
- **Select** activates one of the RGB Adjust actions.

Black Level Adjust

This option contains a sub-menu:

NOTE: Black Level Adjust-Red, -Green, and -Blue are Mode Settings.

- Red

This option displays a slider bar within the Status Bar to allow the adjustment of the screen's Black level for Red.

- **Up (+)** increases the current value.
- **Down (-)** decreases the current value.
- **Select** accepts the current value and exits the slider bar.

- Green

This option displays a slider bar within the Status Bar to allow the adjustment of the screen's Black Level for Green.

- **Up (+)** increases the current value.
- **Down (-)** decreases the current value.
- **Select** accepts the current value and exits the slider bar.

- Blue

This option displays a slider bar within the Status Bar to allow the adjustment of the screen's Black Level for Blue.

- **Up (+)** increases the current value.
- **Down (-)** decreases the current value.
- **Select** accepts the current value and exits the slider bar.

- Exit

- **Up (+)** moves up a selection in the Black Adjust menu list.
- **Down (-)** moves down a selection in the Black Adjust menu list.
- **Select** activates one of the Black Adjust actions.

Advanced

This option contains a sub-menu:

- Phase Adjust

This option displays a slider bar within the Status Bar to allow the adjustment of the analog signals phase.

- **Up (+)** increases the current value.
- **Down (-)** decreases the current value.
- **Select** accepts the current value and exits the slider bar.

Advanced-Phase is a Mode Setting.

- Clock Adjust

This option displays a slider bar within the Status Bar to allow the adjustment of the Horizontal Clocks.

- **Up (+)** increases the current value.
- **Down (-)** decreases the current value.
- **Select** accepts the current value and exits the slider bar.

Advanced-Clock is a Mode Setting.

- Exit

- **Up (+)** moves up a selection in the Advanced menu list.
- **Down (-)** moves down a selection in the Advanced menu list.
- **Select** activates one of the Advanced actions.

Languages

This option contains a sub-menu:

- English
 - Dutch
 - French
 - German
 - Italian
 - Japanese
 - Portuguese
 - Simple Chinese
 - Spanish
 - Swedish
- **Up** (+) moves up a selection in the Language menu list.
 - **Down** (-) moves down a selection in the Language menu list.
 - **Select** exits the Language menu list and activates the selected Language.

OSD Settings

This option contains a sub-menu:

- OSD Position
 - OSD Size
 - OSD Timeout
 - Exit
- **Up** (+) moves up a selection in the OSD Settings menu list.
 - **Down** (-) moves down a selection in the OSD Settings menu list.
 - **Select** activates one of the OSD Settings actions.

OSD Position

This option contains a sub-menu:

- Horizontal Position
- Vertical Position
- Exit
 - **Up (+)** moves up a selection in the OSD Position menu list.
 - **Down (-)** moves down a selection in the OSD Position menu list.
 - **Select** activates one of the OSD Position actions.

Horizontal Position

This option allows the location of the OSD window to move horizontally on the screen.

- **Up (+)** moves window to the right.
- **Down (-)** moves window to the left.
- **Select** accepts the location and exits back to the sub-menu.

OSD Horizontal Position Adjust is a Mode Setting.

Vertical Position

This option allows the location of the OSD window to move up and down on the screen.

- **Up (+)** increases the current value.
- **Down (-)** decreases the current value.
- **Select** accepts the location and exits back to the sub-menu.

OSD Vertical Position Adjust is a Mode Setting.

OSD Size

This option contains a sub-menu:

- Normal
- Double
 - **Up (+)** moves up a selection in the OSD Size menu list and activates that choice.
 - **Down (-)** moves down a selection in the OSD Size menu list and activates that choice.
 - **Select** exits the OSD Size menu list leaving the last selection as the new default.

OSD Size is a Global Setting.

Normal

OSD size is set to normal character size.

Double

OSD size is set to double character size. The OSD position is adjusted if necessary to remain visible on the screen.

OSD Timeout

This option displays a slider bar at the right side of the OSD display to allow the adjustment of OSD Timeout. The timeout ranges from 5 to 55 seconds with 5 second intervals. The default setting is 10 seconds.

- **Up (+)** increases the time the OSD remains displayed.
- **Down (-)** decreases the time the OSD remains displayed.
- **Select** accepts the current value and exits the slider bar.

OSD Timeout is a Mode Setting.

Information

The OSD displays the following unit information:

- Model Number
- Micro Code Version
- EXIT

Status Bar

The Status Bar displays rate, for example:

1024x768 60 Hz

Using the Keyboard

The TFT5600 RKM features nine hot keys with one programmable key available for quick access to the nine most often used rack-mounted devices.

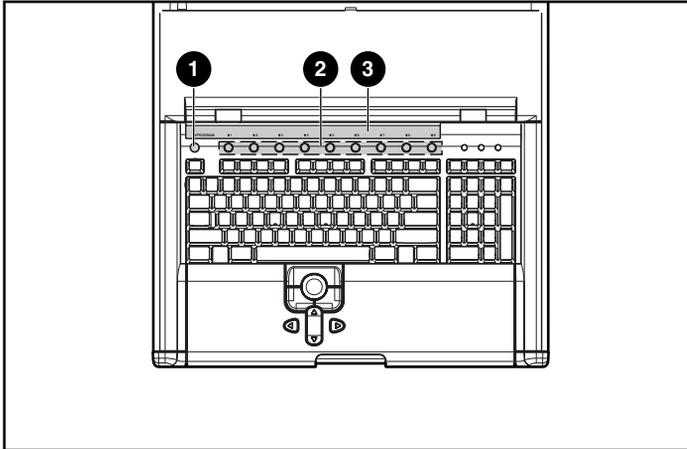


Figure 3-2: Keyboard hot keys

Item	Description
1	Programmable Wizard key
2	Nine hot keys
3	Keyboard hot key label

The programmable wizard key (1) allows programming of the other nine hot keys (2). The wizard key initiates the programming operations mode.

NOTE: Two overlay keyboard hot key labels (3) (pencil re-writable) are included in the kit and are user-installed.

Keyboard Programming

The TFT5600 RKM supports up to seven keystrokes for assigning up to nine devices to hot keys.

To program a hot key:

1. Press the Programming Wizard Key.
2. Press the **Prnt Scrn** key.
3. Identify the device.

Table 3-1: Hot Key Programming Examples

Examples	
1	To select the first server on Remote Switch 1, enter 1 – 1 .
2	To select the eighth server on Remote Switch 1, enter 1 – 8 .
3	To select the fourth server on Remote Switch 2, enter 2 – 4 .
4	To select the standalone server on port 8 of the Master Switch, enter 8 .

4. Press the **Enter** key.
5. Select the hot key that has been assigned, to complete setup.

NOTE: To program all four examples listed in Table 3-1 would require that each example be programmed separately. Assignment of a device is not permanent. To reassign a device, repeat the above steps.

Keyboard Hot Key Label

The TFT5600 RKM features an overlay above the nine hot keys to allow the user to install a pencil re-writable label.

To install the keyboard hot key label:

1. Remove the release liner on the label.
2. Install the label in the recess area above the hot keys.

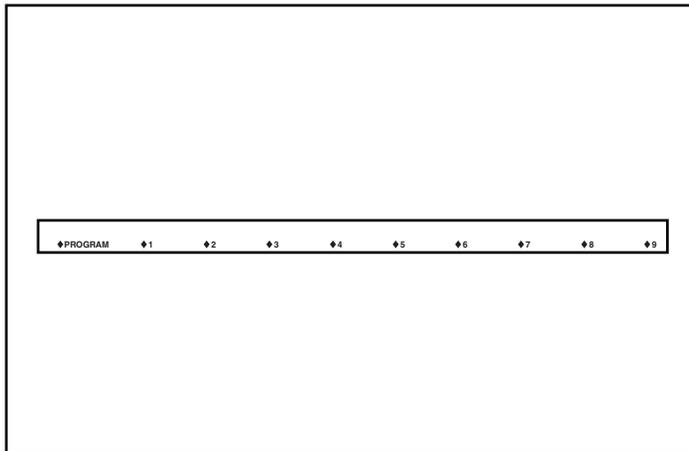


Figure 3-3: Keyboard hot key label

Care and Maintenance

Maintenance and Shipping Guidelines

This section discusses maintenance and shipping guidelines for your TFT5600 RKM.

To protect your unit from overheating and other types of damage:

- Use only a power source and connection appropriate for this unit, as indicated on the marking label and back plate.
- If an extension cord or power strip is used, be sure that the cord or strip is rated for the product. Also, be sure that the total ampere ratings of all products plugged into the extension cord or power strip, do not exceed 80 percent of the extension cord or strip ampere ratings limit.
- Do not overload an electrical outlet, power strip, or convenience receptacle. The overall system load must not exceed 80 percent of the branch circuit rating. If power strips are used, the load should not exceed 80 percent of the power strip input rating.
- Install the unit near an outlet that you can reach easily. Disconnect the product by grasping the plug firmly and pulling it from the outlet. Never disconnect it by pulling the cord.
- Unplug the unit from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners.
- Slots and openings in the monitor are provided for ventilation. These openings must not be blocked or covered. Never push objects of any kind into these slots or openings.

- Do not drop the unit or place it on an unstable surface.
- Do not allow anything to rest on the power cord. Do not walk on the cord.
- Keep the unit in a well-ventilated area, away from excessive light, heat, and moisture. Keep the monitor away from high-capacity transformers, electric motors, and other strong magnetic fields.
- Do not attempt to service this product yourself. Adjust only those controls that are covered by the operating instructions. If the unit is not operating properly or has been dropped or damaged, contact your HP authorized dealer, reseller, or service provider.

Cleaning the Display.

To clean the display:

1. Unplug and turn off the unit.
2. Dust the panel by wiping the screen with a soft, clean cloth.

If the screen requires additional cleaning, use any anti-static CRT screen cleaner.



CAUTION: Do not use benzene, thinner, ammonia, or any volatile substance to clean the monitor screen or cabinet. These chemicals may damage the monitor. Never use water to clean a LCD screen.

Shipping the TFT5600 RKM

Keep the original packing box in a storage area in case you need to move or ship your integrated monitor and unit.

Moving the TFT5600 RKM Installed in a Rack

When moving the TFT5600 RKM installed in a rack, it is recommended to install the lock plates, included in your kit, on each side of the unit and rack.

To install the lock plates:

1. Fully extend the sliding rails until they lock.
2. Place the lock plate behind the corner of the front plastic bezel, making sure the top and bottom holes are aligned with the pins.
3. Insert one 6-32 screw (1) into the middle hole on the lock plate, securing it to the unit.
4. Insert one M-6 screw (2) to the other end of the lock plate, securing the unit to the rack.
5. Repeat steps 2 through 4 to install the other lock plate.

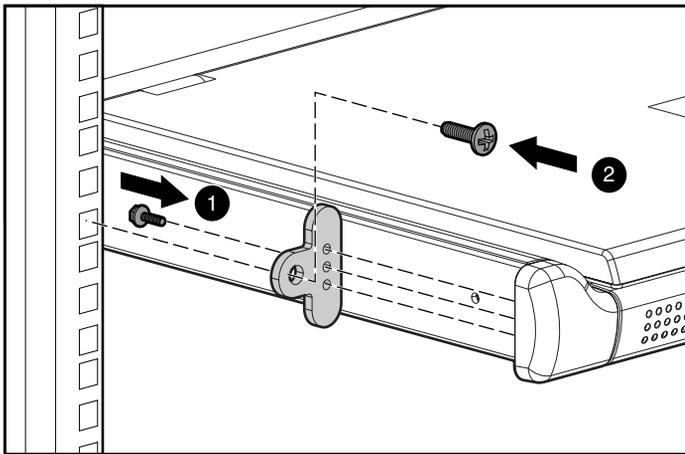


Figure 4-1: Installing lock plates

Regulatory Compliance Notices

Regulatory Compliance Identification Numbers

For the purpose of regulatory compliance certifications and identification, your TFT5600 RKM is assigned an HP Series Number. The HP Series Number for this product is E01007. The TFT5600 RKM Series Number can be found on the product label, along with the required approval markings and information. When requesting certification information for this product, always refer to this Series Number. This Series Number should not be confused with the marketing name or model number for your TFT5600 RKM.

Federal Communications Commission Notice

Part 15 of the Federal Communications Commission (FCC) Rules and Regulations has established Radio Frequency (RF) emission limits to provide an interference-free radio frequency spectrum. Many electronic devices, including computers, generate RF energy incidental to their intended function and are, therefore, covered by these rules. These rules place computers and related peripheral devices into two classes, A and B, depending upon their intended installation. Class A devices are those that may reasonably be expected to be installed in a business or commercial environment. Class B devices are those that may reasonably be expected to be installed in a residential environment (personal computers). The FCC requires devices in both classes to bear a label indicating the interference potential of the device as well as additional operating instructions for the user.

The rating label on the device shows which class (A or B) the equipment falls into. Class B devices have an FCC logo or FCC ID on the label. Class A devices do not have an FCC ID on the label. Once the class of the device is determined, refer to the following corresponding statement.

Class A Equipment

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at personal expense.

Class B Equipment

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

Declaration of Conformity for Products Marked with the FCC logo – United States Only

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For questions regarding your product, contact:

Hewlett-Packard Company
P. O. Box 692000, Mail Stop 530113
Houston, Texas 77269-2000

or call 1-800- 652-6672. For continuous quality improvement, calls may be recorded or monitored.

For questions regarding this FCC declaration, contact:

Hewlett-Packard Company
P. O. Box 692000, Mail Stop 510101
Houston, Texas 77269-2000

or call 281-514-3333.

To identify this product, refer to the Part, Series, or Model number found on the product.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by the Hewlett-Packard Company may void the user's authority to operate the equipment.

Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods in order to maintain compliance with FCC Rules and Regulations.

Canadian Notice (Avis Canadien)

Class A Equipment

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Class B Equipment

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Union Notice

Products with the CE Marking comply with both the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms (in brackets are the equivalent international standards):

- EN55022 (CISPR 22) - Electromagnetic Interference
- EN50082-1 (IEC801-2, IEC801-3, IEC801-4) - Electromagnetic Immunity
- EN60950 (IEC950) - Product Safety

Japanese Notice

ご使用になっている装置にVCCIマークが付いていましたら、次の説明文をお読み下さい。

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい。

VCCIマークが付いていない場合には、次の点にご注意下さい。

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Taiwanese Notice

警告使用者：

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

German Ergonomics Notice

HP Computers, when tested with the HP PE1200 Series monitors, were evaluated and found compliant to the requirements of ZH 1/618 (German Safety Regulations for Display Work Places in the Office Sector) in the Text Mode (720 x 400) using MS-DOS version 3.31 (or higher) and BASICA as published by the Hewlett-Packard Company.

Electrostatic Discharge

Precautions

To prevent damage to the system, be aware of the precautions you need to follow when setting up the unit or handling parts. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

To prevent electrostatic damage, observe the following precautions:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Make sure you are always properly grounded when touching a static-sensitive component or assembly.

Grounding Methods

There are several methods for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:

- Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm \pm 10 percent resistance in the ground cords. To provide proper grounding, wear the strap snug against the skin.
- Use heel straps, toe straps, or boot straps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
- Use conductive field service tools.
- Use a portable field service kit with a folding static-dissipating work mat.

If you do not have any of the suggested equipment for proper grounding, have an HP authorized reseller install the part.

NOTE: For more information on static electricity, or assistance with product installation, contact your HP authorized reseller.

Power Cord Set Requirements

The power cord set meets the requirements for use in the country where you purchased your equipment. The voltage selection switch allows you to select the appropriate line voltage for your server.

Power cord sets for use in other countries must meet the requirements of the country where you use the server. For more information on power cord set requirements, contact your HP authorized reseller.

General Requirements

The requirements listed below are applicable to all countries:

- The length of the power cord must be at least 6.0 feet (1.8 m) and a maximum of 12 feet (3.7 m).
- The power cord set must be approved by an acceptable accredited agency responsible for evaluation in the country where the power cord will be used.
- The power cord set must have a minimum current capacity and nominal voltage rating of 10A/125 volts AC, or 10A/250 volts AC, as required by each country's power system.
- The appliance coupler must meet the mechanical configuration of an EN60320/IEC 320 Standard Sheet C5 Connector, for mating with the appliance outlet on the computer.

Country-Specific Requirements

Use the following table to identify the appropriate accredited agency in your country.

Table C-1: Power Cord Set Requirements - By Country

Country	Accredited Agency	Applicable Note Numbers
Australia	EANSW	1
Austria	OVE	1
Belgium	CEBC	1
Canada	CSA	2
Denmark	DEMKO	1
Finland	SETI	1
France	UTE	1
Germany	VDE	1
Italy	IMQ	1
Japan	JIS	3
Norway	NEMKO	1
Sweden	SEMKO	1
Switzerland	SEV	1

continued

Table C-1: Power Cord Set Requirements - By Country *continued*

Country	Accredited Agency	Applicable Note Numbers
United Kingdom	BSI	1
United States	UL	2

Notes:

1. Flexible cord must be <HAR> Type HO5VV-F, 3-conductor, 0.75 mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country where it will be used.
2. Flexible cord must be Type SVT or equivalent, No. 18 AWG, 3-conductor. Wall plug must be a two-pole grounding type with a NEMA 5-15P (15A, 125V).
3. Appliance coupler, flexible cord, and wall plug must bear a "T" mark and registration number in accordance with the Japanese Dentori Law. Flexible cord must be Type VCT or VCTF, 3-conductor, 0.75 mm² conductor size. Wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7A, 125V) configuration.

D

Specifications

Table D-1: HP TFT5600 RKM

Display	15 in	38.1 cm
Type	Flat panel, Active matrix-TFT LCD	
Viewable Image Size	15-in diagonal	38.1-cm
Face Treatment	Transparent protector with antiglare coating	
Maximum Weight (Unpacked)	13.75 lb	6.25 kg
Maximum Dimensions		
Height	1.7 in	4.32 cm
Depth	15.6 in	39.6 cm
Width	17.00 in	43.2 cm
Resolution	1024 x 768 @ 60 Hz refresh rate (recommended for maximum performance)	
Maximum Output Graphics Resolution	1024 x 768 @ 60 Hz refresh rate	

continued

Table D-1: HP TFT5600 RKM *continued*

Dot Pitch	.29 mm
Horizontal Frequency	48.2 kHz
Vertical Frequency	60 Hz
Environmental Temperature Requirements (Independent of Altitude)	
Operating	10 to 50°C
Storage Temperature	0 to 60°C
Humidity (Non-Condensing)	
Operating	20 to 90%
Non-Operating	0 to 90%
Power Source	90 to 264 VAC, 47 to 63 Hz
Power Consumption	50 Watts

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